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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,299	12/15/2005	Jean-Pierre Joly	BIF023273 US	3881

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EXAMINER	
ZARNEKE, DAVID A	

ART UNIT	PAPER NUMBER
2891	

MAIL DATE	DELIVERY MODE
03/26/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/561,299	JOLY ET AL.	
	Examiner	Art Unit	
	David A. Zarneke	2891	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/15/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 25 is objected to because of the following informalities: there are two (2) claims number as being claim 25. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.,* 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (hereafter AAPA), in view of Joly et al., US Patent 6,197,695.

AAPA teaches a method of fabricating a die containing an integrated circuit comprising active components and passive components, the method comprising:

producing a first substrate containing at least one active component and a second substrate containing critical passive components; and

bonding the two substrates (specification: 3, 22+).

AAPA fails to teach the bonding comprises performing a layer transfer through molecular adhesion.

Joly teaches molecular adhesion to bond two substrates together (4, 40+).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the molecular bonding of Joly in the invention of AAPA because molecular bonding reduces the overall dimensions of the package by eliminating the need for the use of solder balls and/or wires.

Regarding claim 2, AAPA teaches the at least one active component comprises transistors (1, 11+).

With respect to claim 3, AAPA teaches the critical passive components comprise at least one capacitor and at least one microelectromechanical system (MEMS) (1, 11+).

As to claim 4, AAPA teaches the critical passive components comprise at least one of one capacitor or at least one microelectromechanical system (MEMS) (1, 11+).

In re claim 5, AAPA teaches the a dielectric material of said at least one capacitor comprises is a perovskite (2, 10+).

Regarding claim 6, though AAPA and Joly fail to teach the second substrate comprises an electrically conductive material, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute an electrically conductive

material as the insulating second substrate (5, 66+) of Joly because an electrically conductive material could act as a heat sink or shielding. The substitution of one known equivalent technique for another may be obvious even if the prior art does not expressly suggest the substitution (Ex parte Novak 16 USPQ 2d 2041 (BPAI 1989); In re Mostovych 144 USPQ 38 (CCPA 1964); In re Leshin 125 USPQ 416 (CCPA 1960); Graver Tank & Manufacturing Co. V. Linde Air Products Co. 85 USPQ 328 (USSC 1950).

With respect to claim 7, Joly teaches the second substrate comprises producing a dielectric material (5, 66+).

As to claim 8, while Joly fails to teach the second substrate comprises producing perovskite, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a perovskite as the second substrate in the invention of Joly because a perovskite is a conventional dielectric material for their high dielectric constants. The use of conventional materials to perform their known functions is obvious (MPEP 2144.07).

In re claim 9, AAPA teaches forming dielectric insulation trenches in said second substrate during the production of said second substrate (4, 14+).

Regarding claim 10, AAPA teaches using at least one non-critical passive component during the production of the said second substrate in that it acknowledges the need for plural passive components to be formed on the second substrate (3, 31+).

With respect to claim 11, AAPA teaches the non-critical passive component comprises producing a capacitor in trenches (4, 14+).

As to claim 12, AAPA teaches at least one inductor in the vicinity of a face of the second substrate opposite a bonding face after said bonding of the two substrates (5, 3+).

In re claim 13, AAPA teaches at least one inductor is produced on said inductive insulation trenches previously produced in said second substrate (5, 3+).

Regarding claim 14, AAPA teaches at least one interconnection line passing through all or part of the second substrate after said bonding said first and second substrates (5, 3+).

With respect to claim 15, AAPA and Joly teach a die fabricated by a method according to claim 13.

Claims 16-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (hereafter AAPA), in view of Joly et al., US Patent 6,197,695.

AAPA teaches a die containing an integrated circuit comprising active components and passive components and including a single stack of layers, wherein said die comprises an interface between two of said layers such that a said first portion of the die situated on one side of said interface contains at least one active component of said active components and a second said portion of the said die contains critical components of said passive components (see rejection of claim 1).

As to claim 17, AAPA teaches the critical passive components comprise at least one capacitor and at least one MEMS enclosed in a cavity situated inside said die (1, 11+).

In re claim 18, AAPA teaches the critical passive components comprise at least one capacitor or at least one MEMS enclosed in a cavity situated inside said die (1, 11+).

Regarding claim 19, AAPA teaches the capacitor comprises a dielectric material comprising perovskite (2, 10+).

With respect to claim 20, AAPA teaches the die further comprises dielectric insulation trenches (4, 14+).

As to claim 21, AAPA teaches the integrated circuit further comprises at least one non-critical passive component such as a capacitor in trenches (4, 14+).

In re claim 22, AAPA teaches the non-critical passive component comprises a capacitor in trenches (4, 14+).

Regarding claim 23, AAPA teaches the active components are disposed in the vicinity of a first face of the die and wherein said integrated circuit further comprises at least one inductor situated in the vicinity of the said face of the die opposite said first face (5, 3+).

With respect to claim 24, AAPA teaches the at least one inductor is situated on inductive insulation trenches (5, 3+).

As to claim 25, AAPA teaches the active components are disposed in the a vicinity of a first face of said die and said die further comprises at least one interconnection line that emerges in the vicinity of said face of said die opposite said first face (5, 3+).

In re claim 26, AAPA teaches the active components are disposed in a vicinity of a first face of said die and said die further comprises at least one interconnection line that emerges in the vicinity of said face of said die opposite said first face (5, 3+).

Conclusion

Any inquiry concerning this communication from the examiner should be directed to David A. Zarneke at (571)-272-1937. The examiner can normally be reached on M-Th 7:30 AM-6 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Baumeister can be reached on (571)-272-1722. The fax phone number where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David A. Zarneke/
Primary Examiner, Art Unit 2891
3/19/08